

REMARKS

Claims 1-18 were pending in this application. Claims 1, 7, 10-11 and 17-18 have been canceled without prejudice. Claims 2-4, 8 and 12-14 have been amended. Accordingly, claims 2-6, 8-9, and 12-16 are now pending. It is respectfully submitted that such amendments are supported by the specification, claims, abstract of the disclosure and the drawings as originally filed, and that no new matter has been added.

Claim Rejections under 35 U.S.C. § 103

The Examiner rejects claims 1, 7, 10-11 and 17-18 under 35 U.S.C. § 103 as being unpatentable over Kassatly, U.S. Patent No. 5,790,177.

In response, claims 1, 7, 10-11 and 17-18 have been canceled without prejudice.

The Examiner rejects claims 2-3, 8-9 and 12-13 under 35 U.S.C. § 103 as being unpatentable over Kassatly in view of Windrem et al., U.S. Patent No. 5,754,730 (hereinafter Windrem).

Regarding claim 2, the Examiner concedes that Kassatly fails to disclose wherein each of the plurality of recording means adopts a mirror configuration having a plurality of recording apparatuses for recording the same audio and/or video data. The Examiner states that Windrem teaches a digital video recording system employing standard hard disk arrays wherein redundancy is provided through a redundant data controller 99 to handle possible failure of one drive in the array (see col. 2, lines 28-40). The Examiner concludes that it would have been obvious to modify Kassatly by realizing Kassatly with the Windrem redundancy system wherein redundancy is provided through a redundant data controller 99 to handle possible failure of one drive in the array.

The Examiner further states that the applicant argues with respect to claim 11 that Kassatly fails to teach where these discs are employed. The Examiner responds that Kassatly clearly teaches in col. 14, lines 1-3 that it would be desirable that the present VAD (video, audio and/or data) systems be compatible and usable with most, if not all of these conventional systems. The Examiner concludes that it would have been obvious to one of ordinary skill in the art that Kassatly would use the disk drives for the storage devices of Kassatly.

The Examiner still further states that the applicant argues that the Examiner's motivation for combining Kassatly with Windrem is not proper, that the examiner has failed to point out any teaching in Kassatly, Windrem, or the knowledge generally available to one of ordinary skill in the art that there are any "storage" or "memory storage" failures that need to be overcome. The Examiner also states that the applicant argues that Kassatly fails to teach any disk drives. The Examiner states that as showed above, Kassatly clearly teaches disk drives. The Examiner further states that the expected benefits from a manufacturing cost point of view of providing redundancy in the storage devices to contain potential failure of a disk array would themselves have been evidence of obviousness. The Examiner states that expected beneficial results are themselves evidence of obviousness, citing In re Hoffman, 556 F.2d 539, 194 USPQ 126 (CCPA 1977); In re Skoll, 523 F.2d 1392, 187 USPQ 481 (CCPA 1975); and In re Skoner, 517 F.2d 947, 186 USPQ 80 (CCPA 1975).

In response, the rejection is respectfully traversed. One requirement of prima facie obviousness under § 103 is that there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary

skill in the art, to modify the reference or to combine reference teachings. See MPEP § 2143. It is respectfully submitted that the Examiner has failed to provide a sufficient motivation to combine Kassatly and Windrem.

The Examiner has provided a motivation "to handle possible failure of one drive in the array". However, Kassatly teaches "storage" or "memory storage". See FIG. 8, elements 230, 232 and 234; and the specification at col. 20, line 56; col. 21, line 59; and col. 24, line 41. Kassatly fails to teach any drives. The motivation must be logically related to the references combined. Thus, a motivation to overcome drive failures cannot support a motivation to combine Kassatly and Windrem.

To overcome this deficiency the Examiner points to Kassatly at col. 14, lines 1-3. It is respectfully submitted that such cursory listing of media fails to teach, indicate or suggest the drives as recited in claim 2.

Furthermore, the Examiner has failed to point out any teaching in Kassatly, Windrem, or the knowledge generally available to one of ordinary skill in the art at the time of the invention that there are any "storage" or "memory storage" failures that need to be overcome. In an attempt to remedy this gap the Examiner has made reference to "expected beneficial results". However, the Examiner has still addressed these beneficial results toward a disk array. The Examiner has still failed to set forth that there are any storage or memory storage failures that need to be overcome.

Therefore, it is respectfully submitted that claim 2 is allowable.

Regarding claim 3, the Examiner states that Windrem further discloses wherein each of said plurality of recording means adopts an array configuration in which a plurality of recording apparatuses

are connected in parallel. The Examiner further states that Windrem teaches in Fig. 1 a disk array 12 comprising an array of disk drives wherein the array of disk drives provides sufficient bandwidth to record or play digitized video signals, allowing random access to video data (see Fig. 1; disk array 12; col. 1, lines 15-32; and col. 3, lines 31-52).

In response, the rejection is respectfully traversed. The fact that references can be combined or modified is not sufficient to establish prima facie obviousness. See MPEP § 2143.01. It is respectfully submitted that the Examiner has merely provided a statement of operability.

The Examiner has given a motivation to add a disk array "since an array of disk drives provides sufficient bandwidth to record or play digitized video signals, allowing random access to video data". This is merely a statement of operability. The Examiner has not pointed to a deficiency in Kassatly that would be cured by such an addition. The Examiner is respectfully requested to identify what in Kassatly, Windrem, or the knowledge generally available to one of ordinary skill in the art would motivate or suggest to one of ordinary skill in the art to combine Kassatly and Windrem.

The reason this element of the prima facie case is called the "motivation to combine" is that there must be some missing element or function that calls out for the combination or modification. Otherwise it is difficult to set forth a convincing rationale for one of ordinary skill to be motivated or suggested to make the combination, and it would appear that the Examiner is merely using the claims as a template. Thus, it is respectfully submitted that the Examiner has failed to make a prima facie showing of obviousness, and that claim 3 is allowable over Kassatly in view of Windrem.

Regarding claim 8, the Examiner states that Windrem discloses wherein the demultiplexed each one is duplicated on more than one recording medium to perform backup of the demultiplexed each one (see redundant data controller 99; and col. 2, lines 28-40).

Regarding claims 9 and 12-13, the Examiner states that the claimed features are accommodated in the above discussions of claims 3, 2 and 3, respectively.

In response, the rejections are respectfully traversed. It is respectfully submitted that claims 9 and 12-13 are allowable for the same reasons given above regarding claims 3, 2 and 3, respectively.

The Examiner rejects claims 4-5 and 14 under 35 U.S.C. § 103 as being unpatentable over Kassatly in view Nakayama et al., U.S. Patent No. 4,947,271 (hereinafter Nakayama).

Regarding claim 4, the Examiner concedes that Kassatly fails to explicitly disclose wherein control data is multiplexed on data stream, the demultiplexing means demultiplexes the control data multiplexed on the data stream, and provision is made for controlling a recording operation of the recording means and reproduction operation of the reproducing means based on the demultiplexed control data. The Examiner states that Nakayama teaches in Fig. 7 a recording/reproducing means that in the recording process multiplexes recorded data signals to which ID data (control data) had been added. The Examiner further states that in the reproduction process, these multiplexed data signals are later reproduced, demultiplexed and the ID data extracted (see col. 7, line 34 to col. 10, line 19). The Examiner also states that Nakayama clearly teaches that the ID data 137a to 137f (control data) are added during data processing for recording, the details of the processing of the ID data is clearly shown in Nakayama (see col. 7, line 10 to col. 10, line 19). The Examiner still further states that it is desirable to

record data signals with their respectable control data (e.g., ID data), and then multiplex the data signals with the control data in order to facilitate the recovery of the data signals during the reproduction process when the data signals are demultiplexed. The Examiner yet further states that to make these processes efficient there is inherently a control means that controls, based on the control data, the recording/reproduction of the data signals. The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kassatly by realizing Kassatly with a means add control data to data signals, during the recording process, before multiplexing, as taught by Nakayama, in order to facilitate the recovery of the data signal, during the reproduction process when the data signals are reproduced and demultiplexed. The Examiner further concludes that it would have been obvious to realize Kassatly with a control means in order to make these controlled recording/reproduction processes efficient.

In response, the rejection is respectfully traversed. The Examiner has stated that Nakayama teaches "add[ing] control data to data signals, during the recording process, before multiplexing . . . to facilitate the recovery of the data signal, during the reproduction process when the data signals are . . . demultiplexed". However, claim 4 recites that the input data stream includes multiplexed control data. Claim 4 recites that the input data is demultiplexed, recorded, reproduced, and multiplexed. Thus, claim 4 sets forth that the control data is demultiplexed before the recording process, not added during the recording process as given by the Examiner's asserted teaching of Nakayama.

The Examiner has responded that "Nakayama clearly teaches that the ID data 137a to 137f (control data) are added during data

processing for recording." Such a response highlights how the proposed combination of Kassatly and Nakayama fails to meet all the recited elements of claim 4. Claim 4 explicitly sets forth that the input data stream (which is provided to the demultiplexing means as set forth in claim 4) includes multiplexed control data. It is respectfully submitted that such proposed combination, in which the control data do not appear until recording, cannot meet the recited claim elements setting forth that the control data is demultiplexed, where the demultiplexing occurs before the recording.

In addition, it is respectfully questioned how in Nakayama the control data can control the recording means when it is not added until the recording process is under way, as asserted by the Examiner.

Furthermore, claim 4 sets forth that the recorded data is reproduced before the multiplexing process, not that the data is demultiplexed during the reproduction process as given by the Examiner's asserted teaching of Nakayama. Thus, it is respectfully submitted that the Examiner's asserted teaching of Kassatly in view of Nakayama fails to teach or suggest all the claim elements.

Regarding claim 5, the Examiner states that Nakayama teaches wherein at least one of the plurality of recording means and the reproducing means further performs operation in synchronization with a synchronization signal of the data stream (see Fig. 6, and col. 3, lines 8-37).

In response, it is respectfully submitted that claim 5 is allowable as a claim dependent from claim 4, allowable as argued above.

Regarding claim 14, the Examiner states that the limitations of claim 14 are accommodated in the discussions of claim 4 above.

In response, it is respectfully submitted that claim 14 is allowable for the same reasons given above regarding claim 4.

The Examiner states that claim 15 is rejected under 35 U.S.C. § 103 as being unpatentable over Kassatly in view Nakayama, further in view of Morimoto et al., U.S. Patent No. 5,841,941 (hereinafter Morimoto).

Regarding claims 5 and 15, the Examiner concedes that Kassatly and Nakayama fail to disclose wherein at least one of the plurality of recording means and the reproducing means further performs operation in synchronization with a synchronization signal of the data stream. The Examiner states that Morimoto teaches in Fig. 9 an input encoded data stream which is first input to a recording block formatter 28. The Examiner further states that a unit information generator 27 retrieves unit information (sync signal) from the input encoded data stream, so as to output the information to the recording block formatter 28 which formats the data stream so that the number M of successive transport packets are recorded as the number N of successive recording blocks. The Examiner still further states that a reproducing head 9 outputs a reproduced signal from the recording medium 8. The Examiner yet further states that a reproducing processor 30 restores the data stream by performing a reproduction processing for the output reproduced signal (see col. 13, lines 23-65). The Examiner also states that here Morimoto teaches extracting the sync signal from an input encoded data stream and using the extracted sync signal to convert M successive transport packets to N successive recording packets and recording the converted signal on a recording medium. The Examiner further states that a reproducing system restores and reproduces the restored data stream based on the sync signal. The Examiner also states that the sync signal facilitates proper recording and

reproducing of the data stream. The Examiner concludes that it would have been obvious to one of ordinary skill in the art to further modify Kassatly by realizing Kassatly with a means to provide recording/reproducing sync signal in order to facilitate proper recording and reproducing of a data stream.

In response, it is respectfully submitted that claims 5 and 15 are allowable as claims dependent from claims 4 and 14, respectively, which latter claims are allowable as explained above.

The Examiner rejects claim 6 under 35 U.S.C. 103 as being unpatentable over Kassatly in view of Nakayama, further in view of Windrem.

Regarding claim 6, the Examiner concedes that Kassatly and Nakayama fail to disclose a plurality of audio and/or video data recording and reproducing apparatuses being connected in parallel, and wherein the input data stream and the output data stream are input and output among the plurality of audio and/or video data recording and reproducing apparatus. The Examiner states that Windrem teaches in Fig. 1 a disk array 12 comprising an array of disk drives which provide sufficient bandwidth to record or play digitized video signals, allowing random access to video data (see Fig. 1; disk array 12; col. 1, lines 15-32; and col. 3, lines 31-52). The Examiner concludes that it would have been obvious to one of ordinary skill in the art to modify Kassatly by adding the disk array of Windrem to Kassatly since an array of disk drives provides sufficient bandwidth to record or play digitized video signals, allowing random access to video data.

In response, the rejection is respectfully traversed.

First, the fact that references can be combined or modified is not sufficient to establish prima facie obviousness. See MPEP § 2143.01. The Examiner has given a motivation to add a disk array

"since an array of disk drives provides sufficient bandwidth to record or play digitized video signals, allowing random access to video data". This is merely a statement of operability. The Examiner has not pointed to a deficiency in Kassatly and Nakayama that would be cured by such an addition. The Examiner is respectfully requested to identify what in Kassatly, Windrem, or the knowledge generally available to one of ordinary skill in the art would motivate or suggest to one of ordinary skill in the art to add Windrem to the existing combination of Kassatly, Nakayama and Morimoto.

The reason this element of the prima facie case is called the "motivation to combine" is that there must be some missing element or function that calls out for the combination or modification. Otherwise it would appear that the Examiner is merely using the claims as a template. Thus, it is respectfully submitted that the Examiner has failed to make a prima facie showing of obviousness.

Second, it is respectfully submitted that the proposed combination fails to teach or suggest all the claim elements. Claim 6 recites "a plurality of audio and/or video data recording and reproducing apparatuses". An "audio and/or video data recording and reproducing apparatus" comprises a receiving means, a demultiplexing means, a plurality of recording means, a reproducing means, and a multiplexing means. See claim 4. On the other hand, the Examiner has merely asserted that Windrem teaches a disk array. It is respectfully submitted that a disk array is not a plurality of audio and/or video data recording and reproducing apparatuses. Thus, it is respectfully submitted that the Examiner has failed to make a prima facie showing of obviousness.

The Examiner rejects claim 16 under 35 U.S.C. § 103 as being unpatentable over Kassatly in view of Nakayama and Morimoto, further in view of Windrem. The Examiner states that the

limitations of claim 16 are accommodated in the discussions of claim 6 above.

In response, it is respectfully submitted that claim 16 is allowable for the same reasons given above regarding claim 6.

Conclusion

In view of the above, it is respectfully submitted that the application is now in condition for allowance. The Examiner's reconsideration and further examination are respectfully requested.

Respectfully submitted,
LIMBACH & LIMBACH L.L.P.

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By: Charles L. Hamilton
Charles L. Hamilton
Reg. No. 42,624

Attorneys for Applicant